In the claims:

Claims 1 - 37: (Cancelled)

38. (Previously Presented) A local area network comprising:

a plurality of local area network nodes;

an Ethernet switch assembly complying with the IEEE 802.3 standard; and,

communication cabling connecting said plurality of nodes to said switch assembly for providing data communication;

said Ethernet switch assembly comprising:

line interface circuitry coupling power into the communication cabling, over pairs used for Ethernet communications, substantially without interfering with data communication;

a controller governing the supply of power to at least some of the plurality of local area network nodes via the communication cabling; and,

current limiting circuitry connected to the line interface circuitry and controlling current delivered by the line interface circuitry into the communication cabling,

wherein said Ethernet switch assembly is operative to provide at least some power to at least some of said plurality of nodes via said communication cabling,

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said current limiting circuitry being operative to provide a current limit level for each node.

39. (Previously Presented) The local area network according to claim 38, wherein the current limiting circuitry also comprises current sensing circuitry operative to perform current sensing for each wire pair within the communication cabling.

40. (Previously Presented) The local area network according to claim 38, wherein the current limiting circuitry also comprises maximum current level management circuitry operative to maintain at least one maximum current threshold level.

41. (Previously Presented) The local area network according to claim 40, wherein said at least one maximum current threshold level is fixed.

42. (Previously Presented) The local area network according to claim 40, wherein said at least one maximum current threshold level is system-controlled.

43. (Previously Presented) The local area network according to claim 40, wherein the controller is operative to perform status reporting.

44. (Previously Presented) The local area network according to claim 43, wherein the status reporting comprises reporting on power consumed by each channel within the communication cabling.

45. (Previously Presented) The local area network according to claim 43. wherein the status reporting comprises reporting on channel failures.

46. (Previously Presented) The local area network according to claim 40, and also comprising a management station wherein activation status of individual nodes can be programmed by a network administrator providing suitable commands via said management station.

47. (Currently Amended) The local area network according to claim 40, wherein the maximum current level management circuitry is further and operative to disconnect faulty nodes.

48. (Previously Presented) The local area network according to claim 38, and also comprising a management unit via which minimum and maximum current threshold reference levels of power supplied to at least one of the nodes are set.

49. (Previously Presented) The local area network according to claim 38, wherein an LAN protocol is defined over the network, the LAN protocol comprising an IEEE 802.3 protocol operating at 10 Mbps and wherein said Ethernet switch assembly is 10BaseT compatible.

50. (Previously Presented) The local area network according to claim 38, wherein an LAN protocol is defined over the network, the LAN protocol comprising an IEEE 802.3 protocol operating at 100 Mbps and wherein said Ethernet switch assembly is 100BaseT compatible.

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51. (Previously Presented) The local area network according to claim 38, wherein an LAN protocol is defined over the network, the LAN protocol comprising an IEEE 802.3 protocol operating at 1000 Mbps and wherein said Ethernet switch assembly is 1000BaseT compatible.

52. (Previously Presented) The local area network according to claim 38, wherein an LAN protocol is defined over the network, the LAN protocol comprising an IEEE 802.3 protocol operating at one of the following bitrates: 10 Mbps, 100 Mbps, 1000 Mbps; and wherein said Ethernet switch assembly is 10/100/1000 BaseT compatible.

53. (New) An Ethernet switch assembly comprising:

line interface circuitry receiving a plurality of data connections and an electrical power signal, said line interface circuitry coupling power from said electrical power signal into attached communication cabling for transmission to a plurality of nodes substantially without interfering with data communication between the plurality of nodes and said plurality of data connections;

a controller governing the supply of power being coupled by said line interface circuitry for transmission to at least some of the plurality of nodes; and

current limiting circuitry connected to the line interface circuitry and controlling current coupled by said line interface circuitry for transmission to at some of the plurality of nodes,

said current limiting circuitry being operative to provide a current limit for each of the plurality of nodes.

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54. (New)   A power data combiner comprising:

line interface circuitry receiving a plurality of data communications signals and an electrical power signal, said line interface circuitry forming a plurality of combined power/data signals substantially without interfering with data communications;

a controller governing the supply of power to at least some of said plurality of combined power/data signals; and

current limiting circuitry connected to the line interface circuitry and controlling current delivered by said line interface circuitry into said plurality of combined power/data signals;

wherein the controller is operative to provide at least some power via at least some of said plurality of combined power/data signals,

said current limiting circuitry being operative to provide a current limit for each of said plurality of combined power/data signals.

55. (New)   A power data combiner according to claim 54, wherein said combined power/data signal is transmitted to communication cabling comprising 4 pairs, said power being transmitted on unused pairs in the cable.

56. (New)   A power data combiner comprising:

line interface circuitry receiving a plurality of data communications signals and an electrical power signal, said line interface circuitry forming a plurality of combined power/data signals substantially without interfering with data communications; and

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current limiting circuitry connected to the line interface circuitry and controlling current delivered by said line interface circuitry into said plurality of combined power/data signals,

said current limiting circuitry being operative to provide a current limit for each of said plurality of combined power/data signals.

57. (New) A method for delivering power for a plurality of nodes over a data communication infrastructure, the method comprising:

receiving a plurality of data signals;

receiving a power signal;

combining said received plurality of data signals and said received power signal into a plurality of combined power/data signals, said power substantially not interfering with said data signal, said combined power/data signal being transmittable over data communication cabling to a plurality of nodes; and

limiting current to a current limit level for each of said plurality of combined power/data signals.

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